GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Equipment and machinery in the polymer industry, PG_00039714					
Field of study	Materials Engineering, Materials Engineering, Materials Engineering, Materials Engineering					
Date of commencement of studies	October 2020		Academic year of realisation of subject		2022/2023	
Education level	first-cycle studies		Subject group		Optional subject group Subject group related to scientific research in the field of study	
Mode of study	Full-time studies		Mode of delivery		at the university	
Year of study	3		Language of instruction		Polish	
Semester of study	5		ECTS credits		4.0	
Learning profile	general academic profile		Assessment form		assessment	
Conducting unit	Department of Polymers Technology -> Faculty of Chemistry					
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Janusz Datta				
	Teachers	prof. dr hab. inż. Janusz Datta				
		dr inż. Marcin Włoch				
		dr inż. Ewa Głowińska				

Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	15.0	45
	E-learning hours included: 0.0						
	Additional information:						

Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM
	Number of study hours	45	5.0	50.0	100

Subject objectives	Teaching students the main elements of construction and the operation and proper use of selected machines and apparatus of the plastics industry

Learning outcomes	Course outcome	Subject outcome	Method of verification
	K6_W06	knows the basic methods of activities that are applied during solving engineering problems	[SW1] Assessment of factual knowledge
	K6_K01	is aware of its own limitations in owned knowledge; is able to address your doubts to specialists; understand the need continuous improvement of competences	[SK5] Assessment of ability to solve problems that arise in practice
	K6_U09	is able to prepare an oral presentation on a given topic in Polish and in English, using the basic theoretical concepts	[SU3] Assessment of ability to use knowledge gained from the subject
	K6_U06	The student is able to analyze the obtained results; interpret them and present conclusions	[SU2] Assessment of ability to analyse information
	K6_W04	knows the basics of various work scientific apparatus used in materials engineering	[SW1] Assessment of factual knowledge

Subject contents	Apparatus for the production of polymeric materials - containers, chemical reactors. Apparatus for the pre-treatment of polymer materials - stationary, mobile, stand-alone and multi-station dryers with a dry air aggregate; mills; mixers; granulators. Cutting machines. Injection molding machines - standard injection molding machines, injection molds. Extruders, extrusion heads, calibrators, cooling baths, granulators. Modern twin screw extruders, cylindrical snails, segmented screws. Apparatus and machines for producing rubber - Mixers, rolling mills, calenders, hydraulic presses, injection molding machines for rubber products, Dosing and mixing aggregates in RIM and RRIM technology, gear and membrane pumps, mixing heads, two-part and multi-section systems. Recycling machines

Prerequisites and co-requisites	Knowledge of polymer synthesis methods; knowledge of the criteria for assessing the quality of plastics and basic testing methods for plastics		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	prezentation	90.0%	40.0%
	written	50.0%	60.0%
Recommended reading	Basic literature	1) Sikora R., Przetwórstwo Tworzyw polimerowych. Podstawy logiczne, formalne i terminologiczne. Wydawnictwo Politechniki Lubelskiej, Lublin 2008. 2)Poradnik konstruktora maszyn, Verlag Dashofer , Warszwa 2008 3)White R., De S.K., Poradnik technologa gumy, przekład i wydanie IPGum "Stomil" Piastów 2003	
	Supplementary literature	Katalog maszyn i urządzeń do utylizacji odpadów, KBN, Katowice 1996	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		